Rule 74.14 Polyester Resin Material Operations
(Adopted 11/24/87, revised 5/26/92, 4/12/05)

A. Applicability

This rule is applicable to the manufacture of products from or the use of polyester resin material, including touch-up, repair and rework activities.

B. Requirements

1. All polyester resin material shall comply with at least one of the following requirements:

a. For all formulations, the monomer content of the material shall be no more than the percentages specified below, by weight, as applied:

Polyester Resin Material	Current Limits	Effective 07/01/05
Clear Gel Coat	50	-
For Marble Resins	-	40
All Other Resins	-	44
Pigmented Gel Coat	45	-
White and Off White	-	30
Non-White	-	37
Primer	-	28
Specialty Gel Coats	-	48
General Purpose Resin	35	-
Marble or Cultured Resins	-	10 or 32 as supplied, no filler
Solid Surface Resins	-	17
Tub/Shower Resins	-	24 or 35 as supplied, no filler
Lamination Resins	-	31 or 35 as supplied, no filler
Fire Retardant Resin	50	38
Corrosion Resistant Resin	50	48
High Strength Resin	50	40
All Other Resins	-	35

b. Application of the material shall occur using a closed-mold system.

Complying formulations shall not be thinned or diluted with any ROC or changed in any manner that may increase ROC emissions after testing, but prior to or during application.

2. Airless, air-assisted airless, electrostatic, or high volume-low pressure spray equipment shall be used in any spray application, except for touch-up or repair

using a hand-held, air-atomized spray gun utilizing an attached resin container of no more than one quart capacity.

3. Cleaning material used on lines, rollers, brushes, spray equipment and personnel, shall be either a Clean Air Solvent or shall not exceed 25 grams ROC per liter of material as applied.

4. In lieu of compliance with the provisions of Subsection B.1 and B.2, a person may elect to reduce reactive organic compound emissions from the application process by a total capture and control efficiency of at least 90 percent by weight. Control efficiency shall be continuously monitored across an emission control device, the results of which shall be averaged over a rolling 24 hour period. Touch-up or repair work shall not be excluded from this subsection.

5. All materials containing reactive organic compounds, used or unused, including but not limited to semi-solid or liquid polyester resin materials and solid or liquid cleaning materials, shall be stored in closed containers and shall not leak.

C. Exemptions

1. The provisions of Section B of this rule shall not apply to stationary sources using not more than 20 gallons per month of polyester resin material.

D. Recordkeeping

A person subject to the provisions of this rule shall maintain the following records. Such records shall be made available to the APCO upon request and shall be maintained for not less than two years from the date of each entry. The records shall contain:

1. Monthly reports (initialed by operator) of the manufacturer and product number of each polyester resin material and cleaning material used.

2. The monomer content in percent by weight of each polyester resin material used, both as applied and as supplied. For cleaning material, the ROC content in grams of ROC per liter of material as applied. Documentation shall be available to support these records.

3. Daily reports of the continuous control efficiency monitoring information required in Subsection B.4, if applicable. Daily reports shall include the quantity and type of polyester resin material used.

A person operating under the provisions of Subsection C.1 of this rule shall, in lieu of Subsections 1, 2, and 3 above, maintain monthly records of the amount of polyester resin material used.

E. Test Methods

1. Compliance with the requirements of Subsections B.1 a shall be determined using EPA Method 24. Material tested shall be non-catalyzed.

2. The capture and control efficiency of air pollution control equipment shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," January 9, 1995, and methods in 40 CFR 52.741 (a) (4) (iv), Control Device Efficiency Testing and Monitoring.

3. Compliance with the grams of ROC per liter of material requirements in Subsection B.3 of this rule shall be determined using EPA Method 24.

F. Violations

Failure to comply with any provision of this rule shall constitute a violation of this rule.

G. Definitions

1. "Clean Air Solvent": A solvent certified by the South Coast Air Quality Management District as a Clean Air Solvent.

2. "Closed-mold System": A method of forming objects from polyester resins that involves placing the polyester resin material in a confining mold cavity and applying pressure and/or heat.

3. "Corrosion-resistant resin": Polyester resin material used to make products for corrosion resistant applications such as, but not limited to, tooling, fuel or chemical tanks, boat hulls, pools and outdoor spas.

4. "Cure": To transform or polymerize material from a liquid state to a solid or semi-solid state in which the desired physical properties, including hardness, are achieved.

5. "Electrostatic": A sufficient charging of atomized droplets to cause deposition principally by electrostatic attraction. This application method shall operate at a minimum of 60 kilovolts.

6. "Exempt Organic Compounds": As defined in Rule 2.

7. "Filler": A finely divided inert (non-ROC) material that is added to the resin to enhance its mechanical properties and extend its volume. Fillers include, but are not limited to, silica, carbon black, talc, mica and calcium carbonate.

8. "Fire retardant resin": Polyester resin material used to make products that are resistant to flame or fire.

9. "Gel Coat": A polyester resin material, either pigmented or clear, used to provide laminated surfaces with exterior cosmetic enhancement and improved resistance to degradation from exposure to the elements.

10. "General purpose resin": Polyester resin material that is not corrosion resistant, fire retardant, high-strength, or gel coats.

11. "Grams of ROC per Liter of Material": The weight of ROC per volume of material, as calculated by the equation,

Grams of ROC per Liter of Material = $(W_S-W_W-W_{ES})/V_M$

Where

W_S = weight of volatile compounds in grams
W_W = weight of water in grams
W_{ES} = weight of exempt organic compounds in grams
V_M = volume of total material in liters

12. "High-strength resin": Polyester resin material with a casting tensile strength of 10,000 psi or more, used to manufacture high performance products.

13. "High Volume-Low Pressure (HVLP)": Equipment used to apply coatings by means of a spray gun designed to be operated and operated between 0.1 and 10 pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns.

14. "Monomer": An organic compound that combines with itself or other similar compounds to become a cured thermoset resin.

15. "Lamination resins": Orthophthalate, isophthalate and dicyclopentadiene (dcpd) resins used in composite system consisting of layers of reinforcement fibers and resins.

16. "Marble or cultured resins": Orthophthalate and modified acrylic isophthalate resins used for the fabrication of cast products.

17. "Polyester Resin Material": Unsaturated polyester resins, such as isophthalic, orthophthalic, halogenated, bisphenol A, vinyl ester, or furan resins; cross-linking agents, catalysts, gel coats, inhibitors, accelerators, promoters, and any other material containing ROC and used in a manufacturing process. Inert filler and cleaning material is specifically excluded from this definition.

18. “Primer Gel Coat”: A gel coat used to coat the surface of composite parts prior to top-coat painting in the automotive, aerospace, marine and home building industries.

19. "Repair": That portion of the fabrication process that requires the addition of polyester resin materials to portions of a previously fabricated product in order to mend damage immediately following normal fabrication operations.

20. "ROC": Reactive Organic Compound, as defined in Rule 2.

21. "Solid surface resins": Resins used without gel coats to fabricate homogenous solid surface products.

22. "Specialty gel coats": Gel coats used for tooling or in conjunction with fire retardant, corrosion resistant or high-strength materials.

23. "Touch-up": That portion of the fabrication process that is necessary to cover minor imperfections.

24. "Tub/shower resin": Dicyclopentadiene (dcpd) resins, along with orthophthalate and isophthalate resins, used to fabricate bathware products.